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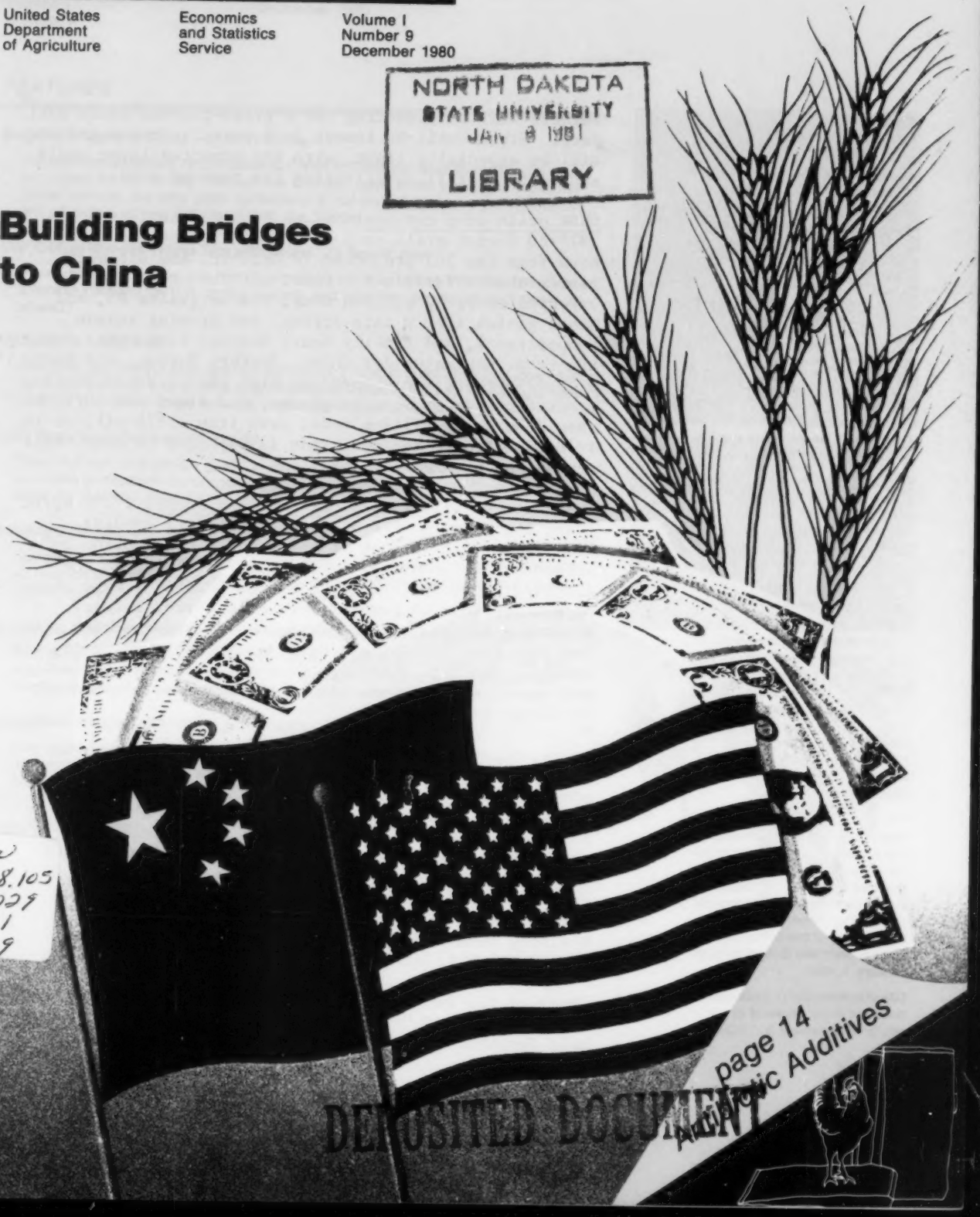
Building Bridges to China



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Antibiotic Additives

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Perspectives

Farmers will be producing for a grain-pinched world next year. Stocks will be lowest in 5 years. Coarse grains will be especially tight, with the expected lower world consumption still outstripping the reduced crop.

USSR grain crop cut again . . . USDA now estimates the 1979/80 Soviet grain crop at 185 million metric tons, down from the 205 projected in October, and not much better than 1978/79's 179 million. The wheat crop is expected to be 90 million tons, coarse grains 85, and other grains 10. A late spring, low growing season temperatures, and finally heavy harvest time rains cut the crop. Estimates for China, Eastern Europe, and much of the Southern Hemisphere are also down. World grain production (wheat, coarse grains, and rice) for 1979/80 should be 1,521 million tons, down from 1,579 million in 1978/79. Production next year is expected to match this season, at around 1,521 million.

Grain stocks will tighten at home and abroad . . . World grain stocks will slip at least a fifth in 1980/81, falling to 10.5 percent of total world consumption by season's end--about the same as the low point in the mid-1970's. U.S. feed grain stocks October 1 were nearly 60 million tons, 8 percent more than a year before. According to the Crop Reporting Board, a 24-percent rise for corn more than offset declines for sorghum, oats, and barley. However, with 1980 output tumbling 18 percent and demand on the rise, stocks at next season's end may be closer to 24 million.

Price, income picture good . . . The October index of prices received by farmers rose for the 6th straight month, although the increases this fall weren't as dramatic as those in late summer. Looking ahead to 1981, the continuing strong growth in cash receipts should more than offset higher production costs. Look for a big jump (16-20 percent) in livestock receipts and a 6-10 percent rise in crop receipts. 1981 net farm income may total as much as $27-$32 billion, representing a strong recovery after 1980's projected net income of around $24 billion.

(Much of the information in this month's Perspectives comes out of USDA's 1981 Agricultural Outlook Conference, held November 17-20, in Washington, D.C.)

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Forecasters expected record sales to China in 1980, but even the optimists were surprised by the results. Though the Chinese have some concerns about the trade balance, the new grain agreement is but one of several signs that China will remain a strong U.S. market in the 1980's.

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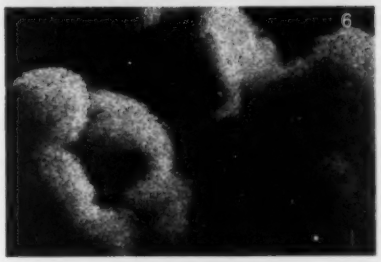
Pesticides: Weighing Benefits Against Risks *by Patricia F. Singer* 16

How have increasing pesticide restrictions affected farmers' production, pocketbooks, and health? Judging from the past, some regulations increase farmers' costs and reduce yields, but not all are to their detriment.



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Building Bridges to China

Last year, USDA experts painted a rosy picture of U.S. trade prospects with China.

They predicted that China would enter the ranks of nations with billion-dollar purchases of U.S. farm products in fiscal 1980. They also expected China to nudge its way into the top 10 U.S. markets for farm goods.

What happened exceeded even the most optimistic forecasts. When final figures are in, China's purchases are expected to reach around $2 billion in the year that ended September 30.

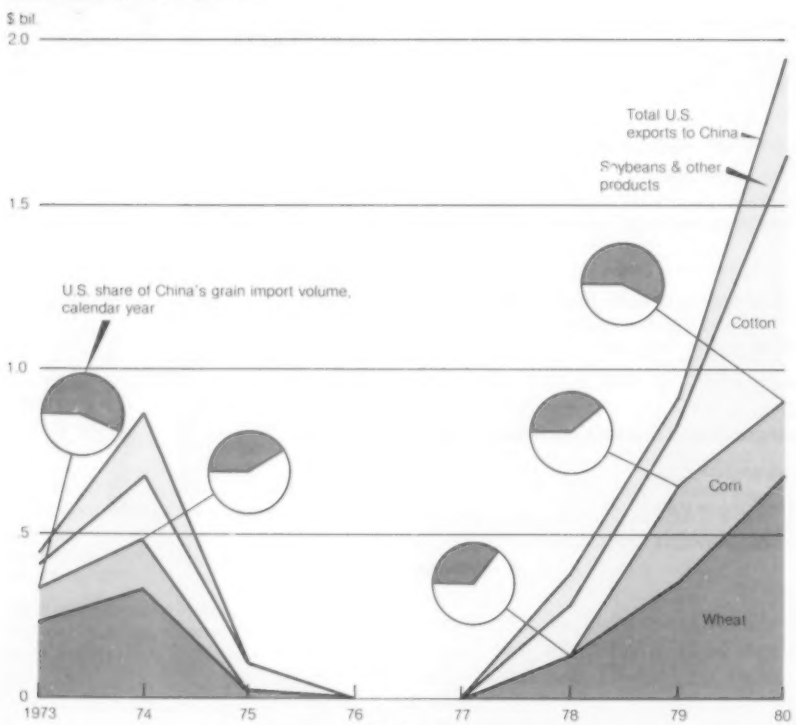
This would not only push the country into the top 10, but would make China the third or fourth leading foreign market for U.S. farm products.

Sales have exceeded even the most optimistic forecasts.

China has climbed the market ladder at an unprecedented rate since fiscal 1977 when Chinese imports of U.S. farm products were practically nil. Until then, trade between the two nations fluctuated considerably, depending partly on whether China's regular suppliers could meets its import needs and partly on how tightly it was trying to control imports.

In 1978, when China again opened its doors to increased foreign trade, it became American agriculture's 20th ranked customer, with sales totaling $370 million. The following year, in an atmosphere of expanding political and economic ties, U.S. sales reached $917 million, beating the previous record of $870 million in 1974 and leaving China the 12th ranked market.

The Booming China Market



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Post-Mao Consumers

Primary responsibility for the dramatic upsurge in China's imports over the last 2 years can be placed on increased consumer demand. China's post-Mao government has adopted policies aimed at increasing the availability of and demand for agricultural products previously in short supply.

It has also adopted a more relaxed attitude towards increased trade, particularly with the U.S. since the establishment of full diplomatic relations in January 1979. As a result, part of this newly created demand is being met through imports of U.S. products.

In view of the low level at which the expansion of the last few years began, it would be unrealistic to expect agricultural trade to continue growing at the same rapid rate. Also, the Chinese will probably continue to give high priority to nonagricultural imports needed for modernization.

However, even if 1981 sales level off, China is likely to be a consistently strong market for our agricultural exports during the 1980's, in contrast to its erratic purchasing pattern of the last decade.

Adding further to this optimism was the October signing of the first grain trade agreement between the U.S. and China. It provides for annual purchases by China of 6 to 9 million tons of U.S. wheat and corn for the next 4 years.

This agreement and others with Canada, Australia, Argentina, and France fix China's total grain imports at 12 to 17 million tons in 1981, a level above that of the past 2 years.

Moreover, the U.S. is now stabilized as a major grain supplier with about 50 percent of the market, somewhat above our previous share.

Grain Shortfalls
These developments probably wouldn't require Chinese imports of U.S. grain to rise above the fiscal 1980 level, recently estimated at around 6 million tons. However, U.S. grain sales are expected to increase in fiscal 1981 because China's grain production this year appears to have dropped after 2 years of substantial increases.

China's 1980 wheat production was recently estimated at around 55 million tons, down 5.5 million tons from 1979 because of dry planting weather in fall 1979 and below-normal temperatures the following spring.

Rice production was also projected to be below last year's record crop of 140.5 million tons. Recent figures pointed to a preliminary total of about 139 million tons. Extended wet weather in central and eastern China is responsible.

The coarse grain production estimate was around 3 million tons above last year's 77.5 million. However, the small rise will likely not be enough to offset shortfalls in the other grains, and U.S. exports of corn should about match the year-earlier level, at least through next June.

Biggest Gainers Beans and Cotton
Although grains make up the bulk of U.S. agricultural export volume to China, soybean and cotton shipments registered the biggest gains in fiscal 1980.

Soybean exports reached a record 810,000 tons, nearly a sixfold increase from 1979. However, China's soybean production this year appears good, with the crop expected to exceed last year's 8.3-million-ton output. As a result, little, if any, growth in U.S. soybean exports to China is likely in the year ahead.

China's 1980 cotton crop is estimated to be only slightly above last year's. Heavy rains hampered production, despite larger plantings and a government campaign—including more incentives for growers—to increase output.

Signing Up the China Market

The U.S.-China grain trade agreement, signed on October 21 in Beijing (Peking), covers U.S. grain sales to China over the next 4 years.

Terms call for annual purchases by the Chinese of 6 to 8 million tons of U.S. wheat and corn during this period. About 15 to 20 percent of the purchases are to be corn.

An added 1 million tons of grain can be purchased without prior notice, making the actual range of this deal 6 to 9 million tons. Prior notice must be given to the U.S. for any purchases in excess of 9 million tons.

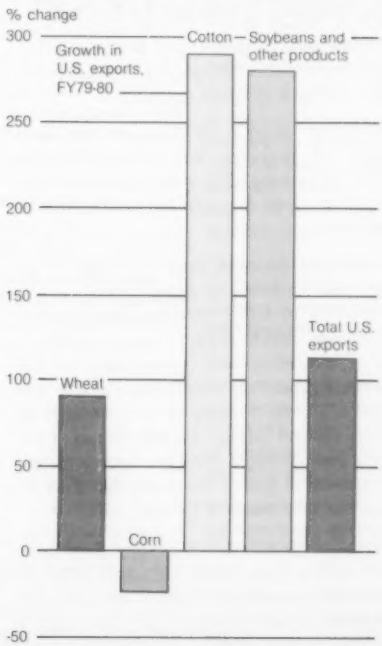
The agreement also allows for Chinese purchases or U.S. sales below the 6-million-ton minimum in the event of exceptional circumstances in either country.

However, in this case, prior consultations between the two countries are required.

Conditions of the agreement go into effect on January 1, 1981, and extend through the end of 1984.

With increases in domestic consumption and textile exports, China's demand for cotton imports should again be strong. However, because of limited supplies in the U.S., China will likely turn to other suppliers for more of its cotton (see story on page 6).

Cotton and Soybean Exports Score Sharpest Value Gains in Fiscal 1980[1]



[1]Based on estimated value of total exports to China.

Balancing Act
While much U.S. attention naturally focuses on export opportunities, the Chinese have some serious concerns about the trade picture.

In the past, they have cautioned that if we want to keep expanding sales of our farm products, Americans must buy more Chinese goods to help offset the cost of items China purchases from us.

Sales of Chinese agricultural products to the U.S. in fiscal 1980 are expected to total about $125 million. That's a 60-percent increase from 1979's $78 million, but a long way from the level of U.S. farm sales to China.

China's major agricultural sales items to the U.S. are feathers and down—used in ski jackets, sleeping bags, and pillows—plus cashew nuts, tea, and silk.

However, agricultural products account for only a fraction of total U.S. imports from China—about 15 percent in 1979.

Chinese textiles, their biggest selling item, have penetrated the U.S. market with considerable success. In fact, so rapidly have China's textile exports grown that import quotas on cotton gloves, shirts, blouses, trousers, and sweaters were recently imposed to control the surge on the U.S. market.

U.S. Cotton Weaves Textile Ties with China

Four years ago, there was hardly a market for U.S. cotton in China. This year, China took almost a fourth of all U.S. cotton shipped abroad, more than any other nation.

China's purchases amounted to nearly 2.4 million 480-pound bales, more than triple the almost 650,000 U.S. bales imported in fiscal 1979.

Why has China's demand for U.S. cotton surged? Production has lagged, failing to keep up with higher incomes and government policies to raise living standards, according to USDA China expert Fred Surls, who recently returned from a visit there.

Also, production hasn't matched the nation's expansion of cotton textile exports. Textiles help China finance its imports of the technology needed for modernization and its rising imports of farm products, particularly grains.

With the largest cotton textile industry in the world, China is striving to maintain its number one position.

More fertilizers and insecticides could make a big difference.

Reducing Dependence

Although dependent on foreign suppliers such as the U.S. and Mexico for cotton, China is always looking for ways to become more self-sufficient. More fertilizers and insecticides could make a difference.

The Chinese use only a fraction of the chemical fertilizers used by U.S. farmers. To augment its fertilizer capacity, China has built several 1,000-ton-per-day anhydrous ammonia plants since the mid-1970's.

In addition, almost one-third of the cotton crop is annually damaged by insects, according to Vice Minister of Agriculture Yang Xiandong, a recent visitor to USDA. The 1979 U.S. loss from insects did not exceed one-tenth of the cotton crop.

"To the Chinese farmer, the cost of insecticides is prohibitive," Yang said.

Advocating a more "farsighted" view by the U.S., the principal supplier of insecticides to China, Yang wants lower prices to enable Chinese farmers to buy. The world economy, he maintains, would benefit by the increased production resulting from a boost in China's yield.

Sharply higher U.S. prices may encourage China to turn more to other suppliers.

Irrigation and Acreage

Besides the need for more agricultural chemicals, improved irrigation could make a significant difference to China's cotton yields. Since 1949, the Chinese have invested heavily in irrigation. Today, according to Vice Minister Yang, between 40 and 50 percent of their cotton cropland is irrigated.

To increase output, China is also staking out more cotton acreage and encouraging farmers to grow cotton.

However, even if all these efforts succeed in reducing its dependence on other countries, China will probably continue to need imports for some time to come.

"Until the Chinese farmer thinks it's in his best interest to grow cotton, it will continue to be a problem area to the Chinese," Surls says.

What About this Year?

China's 1980 production is estimated at 10.3 million bales, slightly larger than last year though smaller than planned because of heavy rains and flooding in central and eastern China.

The disappointing crop, and a moderate increase in consumption, will tend to maintain a strong import demand for cotton.

However, the high price of cotton in international markets and relatively tight supplies in exporting countries will limit China's imports.

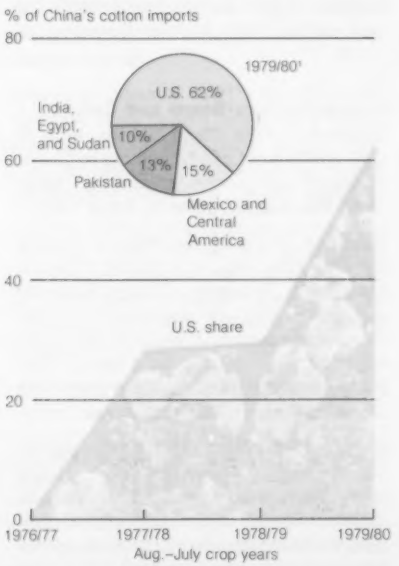
Economist Dave Young predicts that China's cotton imports from all suppliers will slip below fiscal 1980's record 3.7 million bales.

U.S. shipments to China are likely to drop, too, partly because of our limited export supplies. The summer heat and drought helped cut 1980 U.S. output to an estimated 11.6 million bales, well below last year's 14.6 million.

Also, sharply higher U.S. prices may encourage China to turn more to other suppliers, especially Pakistan, Mexico, Central America, and Egypt.

However, for the longer term, so long as U.S. cotton export supplies and quality remain high and U.S. prices competitive, we'll probably continue as one of China's leading foreign suppliers.

U.S. Cotton Captures a Major Share of China Market



¹ESS estimates for non-U.S. suppliers.

World Update

Breaking Bread with China

Although no one can say whether the Chinese will take to sandwiches and sweet rolls, the prospect has U.S. wheat growers and exporters excited.

In talks with USDA officials in March 1979, the Chinese expressed a desire to upgrade their diets by expanding their limited production of bread and bakery products. Subsequent discussions with the U.S. culminated in a formal agreement signed in the summer of 1980.

As a result, a U.S. model demonstration bakery is being built in Beijing (Peking), China. The project is a joint undertaking of U.S. Wheat Associates, Inc., and the Chinese government.

U.S. Wheat Associates is a nonprofit producer organization. They are one of 54 marketing cooperators working with USDA in developing overseas markets for U.S. farm products.

Plans call for the construction of a completely mechanized bakery to demonstrate modern equipment, processing techniques, and the preparation of bakery products to be introduced on the Chinese market. It will also serve as a training center for Chinese bakers.

U.S. Wheat Associates will pay about $700,000 from grower contributions and market development funds provided by USDA. The Chinese government will fund the remainder of the $1.5 million project.

Under the agreement, U.S. Wheat Associates will provide machinery, technicians, and consultants. The Chinese will build and operate the plant, classroom facilities, and the training laboratory.

Construction of the bakery is already underway and should be completed by summer. Meanwhile training will start next February as the first two of four Chinese bakers begin a 20-week course at the American Institute of Baking in Manhattan, Kans. They will then return to supervise the bakery and training center in Beijing.

Iran's Smokers Find It Hard To Switch

Iran isn't buying any U.S. tobacco directly, but other Persian Gulf nations are making up the loss, and some of it may be getting to the Iranians.

Before the revolution, Iran was consistently the largest customer for U.S. tobacco products—especially cigarettes—in the Gulf area. In 1977, Iran's purchases of U.S. cigarettes totaled $84 million and increased to $89 million in 1978.

However, following the rise to power of the Ayotollah Khomeini in 1979, U.S. sales dropped to $23 million. On the surface, it seems that the Iranians gave up smoking in deference to Islamic teaching or in hostility toward the U.S.

However, a look at the rest of the Gulf area indicates that possibly Iranian fondness for American tobacco hasn't been extinguished, and that supplies are arriving indirectly. In Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates, imports of U.S. tobacco products have increased dramatically.

For example, Kuwait's U.S. tobacco imports increased from $19 million in 1978 to $44 million in 1979. Imports by the United Arab Emirates rose from $17 million in 1978 to $71 million in 1979.

There's considerable doubt whether all this tobacco is being smoked in these countries. USDA economist John Parker says a large portion is probably being transshipped to Iran and, in reality, Iranians may be smoking more American cigarettes than ever before.

Eating Cheaper

Despite the upswing in U.S. food prices during the 1970's, American consumers continue to spend far less of their income on food than most of their counterparts abroad.

While percentages vary widely even among U.S. consumers, an average of only 16.5 percent of total private expenditures in the U.S. went for food, tobacco, and beverages in 1977, the latest year for which comparable figures are available on most other countries.

By contrast, consumers in the USSR, Poland, and Hungary are estimated to have spent around 45 percent of their total 1977 income on food, tobacco, and beverages.

In France, these products accounted for about 24 percent of personal expenditures, in West Germany 27 percent, in Israel and Japan 28 percent, in Britain 31 percent, and in Italy 35 percent.

Of the more than 40 countries reviewed, Canada—with 21 percent—came closest to matching the U.S. figure.

Even in Sweden, Denmark, and Switzerland, where per capita disposable incomes are higher than in the U.S., around 28-29 percent of consumers' incomes went to pay food bills.

In low-income countries, the proportions were among the highest, ranging from 40 percent in El Salvador and Cyprus to more than 60 percent in Sri Lanka (Ceylon) and India. In Thailand, South Korea, and Jordan, more than 50 percent of income went for food, tobacco, and beverage items.

Not only do U.S. consumers fare better by world standards, but their own food-income situation has improved over the last 15 years. In 1965, Americans spent about 20 percent of their disposable income on these goods.

The proportion declined to 18 percent in the early 1970's, 16.5 percent in 1977, and, according to the latest figures, 15.9 percent in 1979.

Here's How Some of the Higher Income Nations Compare[1]

	Disposable per capita income	Expenditures: Food, tobacco, beverages
	U.S. dollars	*Percent*
USSR	2,658	45.0
Spain[2]	2,677	33.3
Hungary	2,774	44.0
Greece	2,795	40.3
Poland	2,896	45.0
Italy	3,084	35.0
Israel	3,460	27.5
U.K.	3,831	31.4
Japan[3]	4,291	28.3
France	6,304	23.5
Australia[3]	6,559	25.9
Netherlands	6,945	22.9
Norway	7,179	28.1
W. Germany	7,328	27.2
Belgium	7,394	26.2
Canada	7,482	20.9
U.S.	7,666	16.5
Sweden	8,266	27.7
Denmark	8,295	27.6
Switzerland	8,823	29.4

[1] For 1977. [2] For 1975. [3] For 1976.

Hedging to Avoid Risk

This is the fifth and final article in a special FARMLINE series begun last July to provide more information about futures markets and how they work.

Although a good understanding of futures markets and their use can prove valuable, this series is not intended to recommend hedging as part of your marketing strategy.

What can you gain from trading futures contracts?

That's a serious question, but one that every farmer has to answer individually, according to Allen Paul, a specialist on futures markets.

Paul says that even though most farmers already look to the futures market as an information source, many could be hedging profitably in certain situations. It all depends on your production program, equity position, financing, and attitude toward risk—in addition to the market situation for a commodity in a given year.

You have to start by admitting one thing, Paul says: If your production isn't hedged either through a cash market contract or a futures transaction, then you're speculating on the price of the cash commodity.

A wheat grower bets that the price of wheat will not go down before the crop is ready to sell. A cattle feeder bets that the feeding margin (value of the slaughter cattle less cost of feeders and feed) will not turn unfavorable while the cattle are in the lot.

Many farmers are relatively satisfied with this cash price speculation. Certainly, most are used to it. But you should recognize the risks you are running. When the price of soybeans drops 30 cents a bushel in futures, it is usually dropping proportionately in the cash market, too, because both markets generally respond to the same factors.

A hedge may reduce your normal cash market price risk by as much as 90 percent.

Wary of the Unfamiliar

Futures markets got their risky reputation primarily because speculators put up only about 10 percent of the delivered value of the commodities. This leverage makes for relatively large speculative gains and losses.

However, when you hedge a safe share of your expected production, you aren't using leverage. In fact, the hedge may reduce your normal cash market price risk by as much as 90 percent.

That sounds attractive, but most farmers are accustomed to taking cash commodity risks, so they're comfortable with the risk-equity ratios they carry and wary of the unfamiliar risks of using the futures market.

Nevertheless, many use forward contracts or deferred pricing arrangements to reduce their risks. Paul points out that most of these arrangements are based on futures markets, with the elevator, packer, or dealer taking the futures position instead of the farmer.

Fewer contracts would be offered, he contends, and the terms would be less favorable, if the contractor could not lay off his concentrated risk in a futures market.

A key decision is the amount and type of risk your farm should carry.

How Well Do You Sleep?

In considering whether to use futures markets yourself, a critical decision is the amount and type of risk your farm should carry at a given time. An older farmer with lots of equity in a relatively stable price period faces a far different risk situation than a young, financially extended farmer in a period of price uncertainty.

Your psychology is important, too. How well do you sleep when the crop is nearly ready for harvest, or when markets seem nervous?

Finally, your attitude about futures trading is important. Paul says some people worry more about a $2,000 margin call (which they'll get back—directly or indirectly—when the hedge is lifted) than they do about $20,000 in unpriced grain.

Unless you have a good reason to rule out hedging as a management strategy, you'll probably want to consider some of the unique advantages it can offer, Paul says.

Hedging can protect against a loss you can't afford.

Protecting Against Loss

The most obvious reason for a farmer to hedge is to protect against a loss that the business cannot afford. The young farmer and the expanding farmer, in particular, may well have crucial periods in which it is more important to avoid the big loss than anything else.

They need time to grow into their new operations and are more than willing to take an "adequate" return rather than "speculating" on a high cash price. Hedging can protect them during this period—and more and more frequently lenders are insisting on such loan protection.

Hedging can also lengthen the season in which you can choose to sell your output, Paul notes. You can price grain before it is planted, or cattle before they are put on feed.

For example, cash soybeans are normally sold within a 12-month period

from the time they are harvested to the next harvest. Futures markets can add an extra 12 months by extending the opportunity to sell the planned output of soybeans from the fall before planting to the actual harvest and, then, for the entire storage period.

Livestock producers can lengthen their marketing season even more dramatically, since live animals are costly to hold once they reach full finish. At that point, rates of gain fall off sharply and yield grades can drop.

While the cash marketing period is only a few weeks, a hedge can be put on during any favorable price move over a period of several months—from well before the start of the feeding cycle until the animals are ready for market.

Paper Bushels

Some farmers use another futures technique to lengthen their marketing season—though Paul notes it is not in itself hedging.

Rather than build storage and hold their crops until later in the season—when the basis has narrowed—they sell the crop at harvest. Then they buy futures contracts equivalent to their production, and hold the paper bushels instead of the real ones.

Those who use this technique claim that their savings on storage and financing make it an attractive way to speculate on the basis, though Paul cautions that it also exposes them to more price risk than if they held their crop.

Sometimes, futures are also used to cut losses. Stockmen, in particular, have used this technique when they find themselves locked into a downward cycle. Hedging in a loss can be an effective way to prevent even larger losses that might put them out of business.

Although cash market contracts may offer similar opportunities to price your output in advance, extend your selling period, and cut losses, futures hedging can claim at least one potential advantage—greater flexibility.

If you contract to deliver grain to the local elevator at a fixed price, the elevator then resells it, at a merchandising markup, to someone else who wants delivery.

The elevator cannot let you out of the contract without paying a penalty to the buyer down the line. A futures transaction causes no such repercussions—and that's why it can be entered into or offset with one phone call.

You can price grain before it's planted or cattle before they're put on feed.

Fixed Price, Short Crop

Here's a slightly different situation: Suppose you signed a fixed-price contract with a processor but run into production problems. Worse, it is beginning to look like a short crop year across the country. Rising prices may mean a heavy loss if you have to buy substitute bushels at harvest to meet your contract obligations.

Are you stuck? Not necessarily. You can buy enough futures to offset your anticipated production shortfall.

If you act promptly, any losses suffered by later replacing the shortfall might be largely offset by gains on the futures. The futures thus protect essentially the same margin projected from the cash contract.

All of these obviously simplified examples show how hedging can be useful to particular farmers in particular cases. But no evidence indicates that a farmer can consistently benefit from hedging without careful study of the markets and the situation at any given time.

If you hedge, you have to invest the time necessary to become familiar with futures, how they work, and how they might be useful to you. Whether to hedge is your decision, but, according to Paul, it's a farm management tool far too important to be casually overlooked.

A farmer who ignores futures and continues to "speculate" on cash prices should do so as a conscious decision and not from habit, Paul adds.

Free to FARMLINE Readers

Did you miss any of the previous articles in this five-part series? Or would you like to have the complete series handy for ready reference?

If so, you can write now to reserve your copy of a special futures market booklet soon to be available to *FARMLINE* readers.

The booklet will include this month's article, plus four others published earlier:

- Futures and the Farmer
- Basis: The Beginning
- Delivery: Most Futures Hedgers Know Better
- Pitfalls of Farmer Hedging

To reserve your copy, write: Futures, *FARMLINE* Staff, Room 505 GHI Bldg., ESS, USDA, Washington, D.C. 20250.

1981 Crop Reporting Board Calendar

January–June

January

Monday	Tuesday	Wednesday	Thursday	Friday
			1 Holiday	**2** Egg Products
5 Poultry Slaughter • Celery	**6**	**7**	**8** Turkeys • Vegetables	**9** Crop Production
12 Seed Crops —Prelim.	**13** Noncitrus Fruits & Nuts—Annual	**14** Crop Production —Annual • Popcorn • Potato Stocks • Onion Stocks	**15** Honey—Annual	**16** Milk Production
19 Cattle on Feed • Sheep and Lambs on Feed • Catfish	**20**	**21** Prospective Plantings (subject to change) • Cold Storage	**22** Crop Values	**23** Livestock Slaughter • Peanut Stocks & Processing • Sugar Market Statistics
26 Grain Stocks •Rice Stocks	**27** Sheep & Goats	**28** Com. Fertilizers	**29** Producer-Owned Grain Stocks • Eggs, Chickens & Turkeys • Layers & Egg Prod.—Annual	**30** Cattle • Agricultural Prices

February

Monday	Tuesday	Wednesday
2 Poultry Slaughter • Dairy Products • Egg Products	**3**	**4** Celery
9	**10**	**11** Crop Production
16 Holiday	**17**	**18**
23 Eggs, Chickens & Turkeys • Farm Labor	**24**	**25** Peanut Stocks & Processing • Sugar Market Statistics

April

Monday	Tuesday	Wednesday	Thursday	Friday
		1 Meat Animals—Prod., Disp., & Income • Poultry Slaughter	**2**	**3**
6 Poultry—Prod., Disp., & Income • Celery	**7**	**8** Vegetables	**9** Crop Production	**10** Field Crops —Prod., Disp., & Value
13 Milk Production	**14** Potato Stocks	**15**	**16** Prospective Plantings (subject to change)	**17**
20 Cattle on Feed • Cold Storage	**21** Eggs, Chickens & Turkeys • Catfish	**22**	**23** Grain Stocks • Rice Stocks • Egg Products	**24** Livestock Slaughter • Peanut Stocks & Processing • Sugar Market Statistics
27	**28**	**29** Com. Fertilizers	**30** Agricultural Prices	

May

Monday	Tuesday	Wednesday
4	**5** Celery	**6**
11 Crop Production	**12**	**13** Milk Production
18	**19**	**20** Cold Storage • Catfish
25 Holiday	**26** Sugar Market Statistics	**27**

To start receiving any of the reports listed, send your name, address, and zip code to: Crop Reporting Board, Room 0005-South, USDA, Washington, D.C. 20250. Ask for the report(s) by title.

Colored date indicates reports compiled and processed in lockup.

ebruary

Wednesday	Thursday	Friday
4 Celery	5	6
11 Crop Production	12 Milk Production	13 Cattle on Feed • Potato Stocks
18	19	20 Livestock Slaughter • Cold Storage • Catfish
25 Peanut Stocks & ocessing • gar Market tistics	26 Egg Products	27 Agricultural Prices • Com. Fertilizers

March

Monday	Tuesday	Wednesday	Thursday	Friday
2 Poultry Slaughter • Dairy Products	3	4 Celery	5 Vegetables	6 Floriculture Crops
9	10 Crop Production	11	12 Milk Production • Hatchery Production —Annual	13 Cattle on Feed • Potato Stocks
16 Livestock Slaughter—Annual	17 Sheep & Lambs on Feed • Hops Stocks	18	19 Livestock Slaughter	20 Hogs & Pigs • Cold Storage
23 Eggs, Chickens & Turkeys • Catfish • Vegetables	24 Vegetable Seeds	25 Reg. Cold Storage Holdings • Peanut Stocks & Processing • Sugar Market Statistics	26 Egg Products	27 Wool & Mohair
30 Com. Fertilizers • Dairy Products	31 Agricultural Prices			

May

Wednesday	Thursday	Friday
		1 Poultry Slaughter • Dairy Products
6	7	8 Vegetables
13 Milk Production	14 Cattle on Feed • Potato Stocks	15 Maple Syrup
20 Cold Storage • tfish	21 Livestock Slaughter • Eggs, Chickens & Turkeys • Egg Products	22 Milk—Prod., Disp., & Income • Farm Labor • Peanut Stocks & Processing • Seed Crops—Annual
27	28	29 Agricultural Prices • Com. Fertilizers

June

Monday	Tuesday	Wednesday	Thursday	Friday
1 Poultry Slaughter • Dairy Products • Dairy Products—Annual	2 Minn.-Wis. Mfg. Milk Final—1978-80	3	4 Celery	5 Vegetables—Annual
8 Vegetables	9	10 Crop Production	11 Milk Production	12
15 Cattle on Feed	16	17	18 Livestock Slaughter • Egg Products	19 Cold Storage • Catfish
22 Grain Stocks • Hogs & Pigs	23 Eggs, Chickens & Turkeys • Cherries —June 15 • Vegetables	24	25 Peanut Stocks & Processing • Sugar Market Statistics	26
29 Acreage • Popcorn • Com. Fertilizers	30 Agricultural Prices—Monthly • Agricultural Prices—Annual			

Beefing Up Profits with Feedlot Grain

Range grass may be cheaper than corn, but the total cost of producing a pound of beef on the range is usually higher than in a feedlot, according to a recent USDA study.

At October 1980 feed grain prices of nearly $3 a bushel, it cost 67 cents a pound to bring a 449-pound steer calf to the 1,065-pound standard slaughter weight in an average feedlot delayed finishing operation, says Ray Brokken, a livestock economist with USDA's Economics and Statistics Service (ESS) at Corvallis, Ore.

It would not only take longer, but it would cost more—an average of 68.4 cents a pound—to fatten the same calf to slaughter if it were kept on an open range and then fed from 720 to 1,065 pounds, Brokken found.

Finally, if the 700-pound range-fed animal were taken directly to slaughter without grain feeding, it would cost 73 cents a pound to produce. Moreover, range-fed beef receives a lower grading, and, in turn, a lower price per pound.

In October, beef graded Choice sold for 68 cents at Omaha—a nickle more than Good.

Less Beef, Higher Cost

Not only do range-fed cattle produce higher cost beef but less total beef when grain feeding is omitted, since a 1,065-pound slaughter weight isn't reached without confinement finishing.

What about various combinations of range feeding and feedlot finishing, such as finishing yearlings instead of calves? Brokken found that the feedlot advantage usually remains: The earlier an animal is brought into confinement after weaning, the lower the production costs.

This also applies to length of stay—up to a point. Steers left in confinement to be finished off for Choice grade or premium price may show extra net profit, even if marginal costs overtake average costs, as long as grain prices are favorable.

For critics who contend that grain feeding is an expensive and wasteful use of feed which could be served directly to humans, the study's conclusion may be hard to swallow.

Feedlots Meet U.S. Beef Needs

U.S. cattle producers have argued for years that feedlots provide Americans with the large and dependable supply of beef that they want, and at relatively low prices. To accommodate growing demand, feeding provides more beef quicker and with fewer cattle.

"It may appear as a paradox, but with present input costs, and within practical growth limits, the shorter the feedlot period the greater your production costs per pound," says Brokken who, with fellow ESS economists Carl W. O'Connor and Thomas L. Nordblom, conducted the study to provide data requested by Congress.

The USDA researchers studied six variations of feedlot uses to compare costs. Cattle were placed in feedlots at different stages of growth—such as yearlings or calves—and the costs of production were calculated through slaughter weight. In all but a few of the past 30 years, they found, feedlots provided cheaper beef on a per pound basis.

This comes as no surprise to cattle feeders who, Brokken notes, "often pay more per pound for animals that they purchase for grain finishing than they receive for them after feeding them on grain to relatively heavy weights.

"These price relationships can provide a profit only if the overall cost per pound of the animal is reduced by feeding it to the heavier weight."

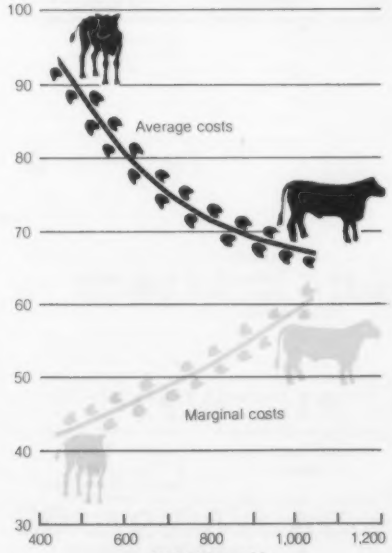
Marginal And Average Costs

The key to understanding the economics of feedlot finishing is the difference between the marginal cost and average cost per pound.

The average cost per pound is never higher than at birth, Brokken explains, since it's based on the accumulated cost of the animal divided by its weight.

The marginal cost is the expense of the last pound added to the total weight. The marginal cost is never lower than at birth. As the animal grows, its average cost declines as its marginal cost increases. Finally, the marginal cost catches up with average cost, and then they increase together.

Average and Marginal Costs Show Expense of Adding Extra Pounds*



*Approximate feedlot production costs for steer calves with corn at $3.25 per bushel.

Cheapest Production

"Our analysis of feedlot alternatives shows that the cheapest way to produce the most beef per time period," Brokken says, "is to put the cattle in the feedlot as soon as they are weaned and to fatten them on what is called a delayed finishing program—one in which they are fed a growing ration followed by a high grain finishing ration until they reach market weight."

Let's take the 449-pound beef steer calf placed on a delayed finishing program at October 1980 grain and production costs, as described earlier. The 67 cents per pound production costs add up to $713 in the 9 months of confinement needed to attain standard slaughter weight of 1,065 pounds.

A breakdown of average production costs of delayed finishing includes 3,817 pounds of grain and other feed worth $229, plus the purchase cost of the 449-pound calf, and veterinary, yardage, interest, and other expenses of $484, Brokken figures.

Will the cattle feeder make a profit? Using August 1981 futures prices set in October 1980, the finished steer would sell for $75 per hundredweight at Omaha, or $799 for a 1,065-pound animal. Subtracting the $713 total production expenses, the cattle feeder still clears $86 profit.

Using yearling steers (700 lbs.) and data for October, the operator pays $509 in purchase and other costs over the 6 months of feeding to bring the animal to the 1,065-pound slaughter weight.

Cheap Grass but High Costs

While grass is cheap, total production expenses aren't. By the time the range and grain fed yearling reaches slaughter weight, it cost an average of $267 to produce the 365 additional pounds gained, or 60 cents per pound gained. This compares with 48 cents per pound of added weight for the feedlot-finished steer calf. And this leads back to the marginal price factor.

One of the reasons grain feeding pays is that while the marginal price for each additional pound over standard slaughter may still exceed the price received for that pound, the per pound value of the entire steer is then worth 5 cents each more than nonpremium per-pound value. This increases total revenue and profit.

In other words, those extra and expensive pounds—which give the meat fat marbling characteristics of Choice grade—have transformed the entire animal into a more valuable product.

Don't Overdo It

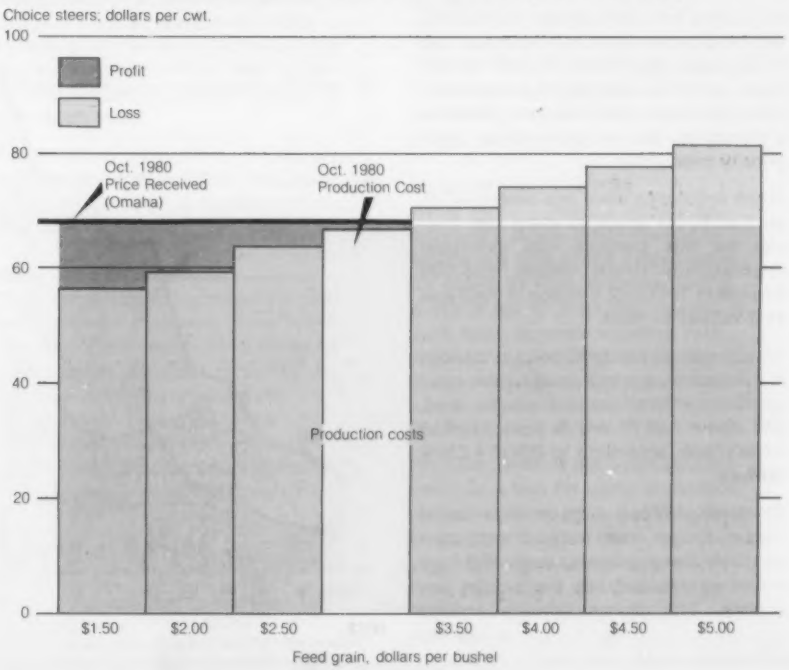
The USDA researchers caution, however, that overfeeding for premium price—or even use of confinement feeding at all—isn't always profitable.

In feeding past standard slaughter weight, a point of diminishing returns can be reached, depending on how high feed grain prices are, or the level of beef prices.

The entire feedlot industry has faced rocky times when feed grain prices rose too high—as in 1974-75—making confined feeding unprofitable. Brokken estimates that with expected cattle prices for 1981, feed grain prices would have to rise to $4 a bushel before feedlots would be severely strapped.

The economist, however, cautions producers to look carefully at their own operation before trying to apply USDA findings. The study uses average data, so actual costs of producing a slaughter-weight steer will vary greatly among farms and feedlots, according to such variables as labor costs and facilities.

Feedlot Profits Vary With Grain Prices (October 1980 Delayed Calf Feeding)



Antibiotic Feed Additives: The Prospect of Doing Without

Can livestock and poultry producers afford to do without antibiotic feed additives to promote growth and prevent disease?

Extensive use of drugs in animal rations is suspected by the U.S. Food and Drug Administration of contributing to human health problems. FDA has proposed restrictions that would ban the use of penicillin in animal feed and eliminate certain uses of tetracycline.

Action on the proposal has been delayed pending further study, but farmers are worried about the impact any further restrictions could have on the economics and management of their livestock and poultry production.

Although restrictions would not necessarily prevent the use of the drugs for treatment of sick animals, many operations depend on subtherapeutic uses—continued, low-level doses in animal rations—to enhance growth and prevent disease.

Producers with confinement operations, where animals are under stress and more vulnerable to the spread of disease, could be especially hard-pressed. Many consider antibiotic feed additives a necessary tool for large-scale, high-density production.

Since antibiotics were first employed as feed additives about 30 years ago, their use for this purpose has increased dramatically—from about 265,000 pounds in 1951 to 2.3 million in 1962 and 12.3 million in 1978.

Almost half of the antibiotics produced in this country are now used for low-level additions to livestock and poultry feed, and about half of this is penicillin and tetracycline, according to USDA's Clark Burbee.

Economist William Henson says use of these drugs has helped maintain relatively low production costs and food prices—particularly in the poultry industry. The drugs reduce animal sickness and mortality and improve animal growth and feed conversion efficiency.

Over Half Get Additives

A recent study by Henson describes the use and effectiveness of tetracycline, penicillin, and nitrofurans in poultry production, and estimates what would happen if their use were further restricted.

In 1976, well over half of all poultry housed received some of the feed additive drugs being considered for additional restrictions.

Tetracycline drugs are given to around 40 percent of all broiler chicks and mature breeders. Their use in feed rations reduces death rates by 10 to 15 percent for replacement pullets and by 8 to 12 percent for broilers, says Henson, who based his conclusions on laboratory studies and a 1977 survey of poultry scientists.

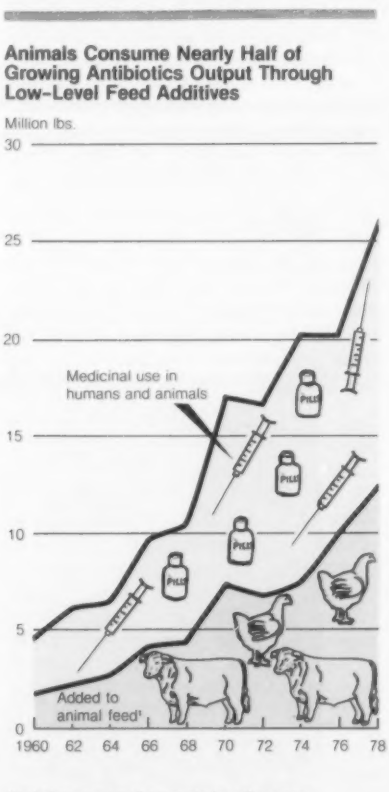
Ninety percent of turkeys under 8 weeks of age are fed nitrofurans, and this reduces poult mortality rates by 40 to 60 percent.

Antibiotics also improve feed efficiency, reducing the amount of feed needed for weight gain or egg production—although nobody understands exactly how. The "sparing" effect, or improved feed conversion ratio, may save feed by controlling low levels of disease, affecting an animal's metabolism or changing the way it absorbs nutrients from its feed.

Laboratory tests have shown that feed efficiency for broilers fed antibiotics increased 6 to 12 percent compared with birds that did not receive antibiotics. Egg production increased 5 to 10 percent among birds that were given tetracycline in their feed.

In addition, use of feed additives also enhances reproduction rates and improves quality of the final meat product.

Animals Consume Nearly Half of Growing Antibiotics Output Through Low-Level Feed Additives



¹Includes very small amounts for other uses.
Data extracted from reports of the U.S. International Trade Commission.

Impact of Proposed Restrictions

A ban on subtherapeutic use would have several consequences for poultry producers, Henson says.

Although it would not necessarily preclude antibiotics for treatment of animal disease, poultry—especially broilers—have a short life cycle. By the time a disease is diagnosed and treatment is prescribed, the loss to the producer could wipe out the slim profit margin on the affected birds.

In the short run, costs of production would increase as animal mortality increased. Also, more feed would be necessary to achieve the same weight gains or egg production. Overall production could suffer, and costs per unit of final product would rise.

Henson's study indicates that the proposed restrictions on certain drugs could raise production costs by as much as 7.8 percent for broilers, 3.9 percent for eggs, and 5.0 percent for turkeys. If subtherapeutic use of tetracyclines and all uses of nitrofurans were banned, the effects would be compounded.

To maintain 1976 output levels in the face of bans on subtherapeutic use of tetracyclines and all use of nitrofurans (the most widely used drugs in broiler, egg, and turkey production), Henson estimates the increased costs at $74 million for egg production, $179 million for broilers, and $30 million for turkeys.

Obviously, farmers wouldn't be the only ones to feel the impact. The expected short term results, increased production costs and reduced poultry meat supplies, would probably mean higher consumer prices.

Uneven Adjustments

The long run outlook, however, is less gloomy, according to Henson's analysis. Poultry producers would almost certainly adjust to further restrictions, although, Henson adds, the adjustments would hit producers unevenly.

Those who now use antibiotics regularly as feed additives would be hardest hit by the increased incidence of disease and higher production costs, which could put some of them out of business.

Farmers who normally do not use additives could also be affected by increased disease incidence, since many poultry diseases are transmitted from farm to farm.

After a few years, however, the poultry industry would probably regain its stride, he says. Production would likely catch up with the level it would have reached without the restrictions, and those still in business could probably increase their sales and profits.

What Would Producers Do?

In the face of a ban, producers would turn to alternative management practices and technologies to help make up for the loss of antibiotics in feed. Some of these techniques can be used right away, while others would require further research.

Possible adjustments include:

- Other antibiotic drugs.
- Genetic improvements to breed disease-resistant animals.
- Better environmental control, including isolation areas and better ventilation to prevent outbreaks and spread of disease.
- Better disease management to recognize and treat sick animals sooner.
- Improved sanitation practices such as cleaning out housing completely between generations of animals.
- New vaccines to prevent disease.

It is also possible that less intensive rearing could become more economically viable.

In any case, feed manufacturers, veterinarian scientists, and cooperative extension people would have to work with producers to develop different management techniques and help reduce the ban's impact, Henson says.

The Case Against Drug Additives

Questions on the possible health dangers, and the effectiveness, of antibiotic feed additives are far from resolved.

FDA is concerned that continued, widespread subtherapeutic use of drugs such as penicillin and tetracycline could help create new strains of bacteria resistant to these drugs, which are needed to treat human and animal disease.

Farmers and others who work closely with the animals and their carcasses might be particularly susceptible to infection by resistant bacteria.

Many Aren't Convinced

However, even among scientists concerned about drug use, many aren't convinced that harmful effects can be documented. A recent report by the National Academy of Sciences recommends research on the mechanism of action of subtherapeutic levels of antibiotics and other drug additives in animal feed.

Its authors say that scientists do not agree on whether subtherapeutic use of antibiotics in feed can cause human disease that is resistant to drug treatment.

Further, they contend that using these drugs for disease treatment in both animals and humans may also help develop resistant strains of bacteria, particularly with drugs, such as tetracycline, that are used widely in hospitals.

Yet another factor for policymakers to consider is that, if subtherapeutic use is banned, more animals will probably get sick and therapeutic use will go up.

Investigations Continue

While these questions remain unanswered, drugs other than antibiotics are also under investigation for safety by FDA. Sulfamethazine, which is fed to hogs, can remain in pork meat at levels violating FDA regulations. And tumors have been found in laboratory animals fed nitrofurans, a popular drug in turkey production.

However, even if the investigations result in a ban on using antibiotics and some other drugs in animal feed, final action may not come for several years. FDA procedures, possible legal opposition, and the need for further study should delay any restrictions.

Pesticides: Weighing Benefits Against Risks

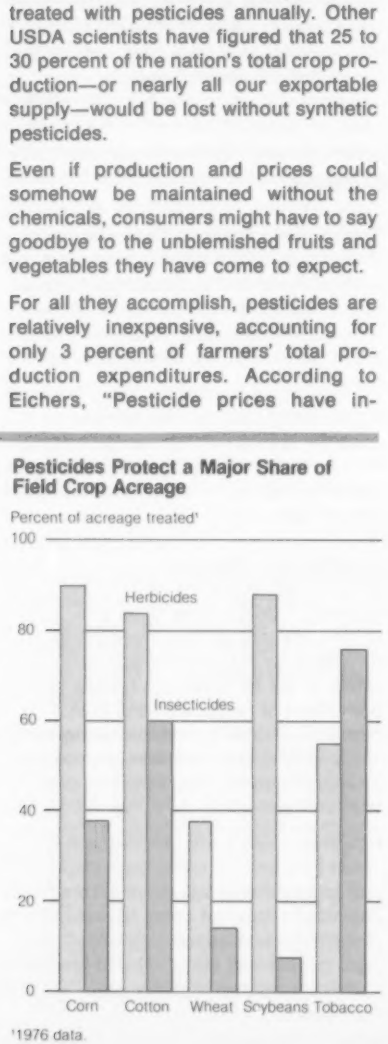
Most farmers probably agree that some regulations on farm chemicals are needed to protect health and the environment, but many are upset by the increasing restrictions on the pesticides they depend on to protect their crops.

USDA economist Ted Eichers estimates that 225 to 250 million acres—or around two-thirds—of American cropland are treated with pesticides annually. Other USDA scientists have figured that 25 to 30 percent of the nation's total crop production—or nearly all our exportable supply—would be lost without synthetic pesticides.

Even if production and prices could somehow be maintained without the chemicals, consumers might have to say goodbye to the unblemished fruits and vegetables they have come to expect.

For all they accomplish, pesticides are relatively inexpensive, accounting for only 3 percent of farmers' total production expenditures. According to Eichers, "Pesticide prices have increased less than the prices of any other farm inputs since 1970."

Pesticides Protect a Major Share of Field Crop Acreage



¹1976 data.

As important as pesticides are to farmers, it's not surprising that many take a dim view of increasing regulation, even though they're well aware of the potential hazards of farm chemicals.

Minimizing Measures

In fact, farmers were among the first to recognize the economic and environmental advantages of alternatives to routine pesticide applications.

Many producers minimize pesticide use by monitoring pest populations and carefully timing chemical applications. Integrated pest management (IPM), which includes biological and other natural pest control techniques, is being used with increasing frequency and success on many crops.

However, even IPM strategies may call for application of synthetic pesticides. And, while farmers' demand for pesticides has shown signs of leveling off from the rapid growth of the 1960's, pesticides will remain a necessary part of large-scale commercial agriculture for the foreseeable future, Eichers says.

As long as pesticides are used, the debate over how to balance the benefits and risks is likely to go on, and farmers will probably continue to face new regulatory actions.

How will this affect their production, pocketbooks, and health? That depends, Eichers says. Judging from the past, some pesticide regulations increase farmers' costs and reduce yields, but not all are to their detriment.

Less Harmful Alternatives

For example, regulations have taken some of the broad-spectrum chemicals, such as DDT, off the market. This has encouraged the development of alternatives that are less likely to harm beneficial insects.

Cotton growers once killed bollworms and budworms with broad-spectrum insecticides exclusively, which also killed most predators and parasites that would have helped control the worms naturally.

Growers were thus locked into spraying at regular, short intervals to keep the worms from coming back in greater numbers. And, the insects were growing resistant, requiring still more pesticide.

Recently, synthetic pyrethroid insecticides were developed, and EPA expedited their registration. They are somewhat more selective, so they spare many beneficial insects. Often, spraying can begin later in the season with them, and then cotton fields can be treated less frequently than with the older compounds.

With fewer applications, cotton pests are less likely to develop resistence. The self-defeating cycle of insecticide, resistance, more insecticide, more resistance is usually slowed.

Indeed, several of the broad-spectrum insecticides banned by government action—including DDT—were already losing value to farmers because pests were becoming resistant to them.

Minor Crops Left Behind

As regulations become more stringent, however, some farmers are left behind: the growers of minor crops.

Under the current Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), each combination of crop, pest, and pesticide must be appraised before it can be okayed.

"Chemical companies do not seek to register pesticides if the market potential is inadequate," Eichers says, "and most of the fruit, vegetable, livestock, and specialized crop uses are considered minor."

To help minor-crop producers secure registration of the pesticides they need, USDA and the state agricultural experiment stations maintain the interregional Research Project (IR-4). The project funds required research on the effec-

tiveness and human tolerance of a pesticide.

About 400 applications for IR-4 aid come in annually, project officials estimate. For instance, garlic growers in California and Oregon got IR-4 help in clearing bromacil, an effective weedkiller.

Limited Aid Funds

But for every group of growers that receives assistance, one group is turned away because of the project's financial limits. For these farmers, the consequences of regulation can be continued crop losses to pests.

For pesticide manufacturers, too, regulation has become increasingly expensive, and these rising costs affect farmers directly and indirectly.

Between the periods of 1967-70 and 1977-78, leading chemical manufacturers reported nearly a fourfold increase in pesticide research and development costs. If this keeps up, pesticide prices may start outpacing other farm production cost rises, Eichers says.

At the same time, the selection of pesticides available to farmers seems to be shrinking. The number of new pesticide products registered annually dropped 80 percent between 1967-70 and 1977-78, from ten a year to two a year. Although registrations are again increasing, some minor pests, even on major crops, may not be controllable.

While these trends are very disturbing to many in agriculture, pesticide regulations can also affect farmers in another—and more positive—way unrelated to production economics.

Pesticide Poisoning

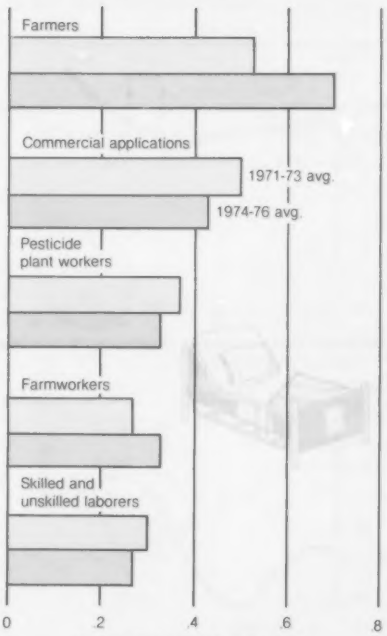
Eichers estimates that private applicators—mainly farmers and farm workers—spread about 70 percent of all agricultural pesticides used in the U.S.; only 30 percent are spread by contractors.

Thus, except for chemical plant workers, farmers suffer greater exposure to pesticides than almost any other occupational group. Regulations have often been designed to help protect farmers and their families from pesticide poisoning.

From 1971 through 1976, EPA monitored pesticide poisonings that led to hospitalization—and found that farmers had the highest average rate of any occupational group studied. Even pesticide plant workers accounted for fewer hospital admissions than farmers.

As a result of the occupational hazards, a new classifying system for pesticides was created: restricted and nonrestricted use. Since late 1978, farmers and others who wish to apply restricted-use pesticides have had to be certified.

Pesticide Poisonings: Farmers Widen Their Lead



Source: *National Study of Hospitalized Pesticide Poisonings, 1974-76, July 1980, EPA.*

Through USDA's extension service, each state trains applicators through workshops or home study courses. The certification program teaches the importance of following directions on pesticide labels, using protective clothing and equipment, and recognizing and treating acute pesticide poisoning.

Long-Range Dangers

Even with these precautions, EPA officials stress that pesticides may still pose a threat to health. Subacute symptoms—headaches, blurred vision, respiratory problems—may be hard to pinpoint.

And, for some pesticides, little is known about the long-range effects of exposure—such possible consequences as tumors, sterility, and birth defects. Federal regulations now require animal studies of chronic effects before a pesticide can be registered.

In addition, information is still being collected on pesticides that are already registered. Certain triggers—including evidence of major long-term damage—can cause a chemical to be restricted, temporarily suspended, or permanently banned.

In all registration cases, benefits are measured against risks in determining which use patterns are retained.

The registration process is necessarily slow and costly. And, because of continuing pressures to safeguard human health and the environment, it's likely to stay that way.

For farmers, this means a good deal of inconvenience, probably rising costs, and possibly future crop loss. However, it should also mean a safer occupation.

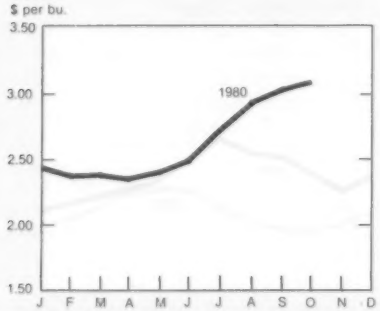
Many contend the tradeoff is justified. But many others continue to argue that more consideration must be given to farmers' costs and production in weighing the benefits and risks of pesticides.

Farmline Trends

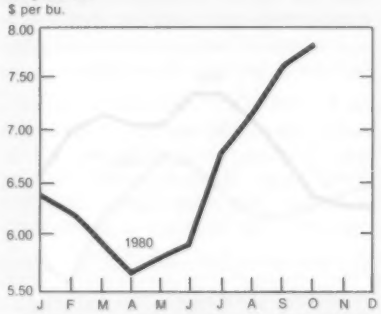
Monthly Price Monitor

U.S. average farm prices for corn, soybeans, and wheat all rose from September to mid-October, while cotton slipped 6 cents a pound. Wheat prices went over the $4-a-bushel mark for the first time in 5 years. In the dairy and livestock sectors, milk prices hit $13.60 per cwt. in October, but Choice steer, Choice feeder steer, and broiler prices dropped. Omaha barrows and gilts picked back up above $48, almost $20 per cwt. higher than their April low. Except for Choice feeder steers, all crop and livestock prices reported below were above their year-earlier levels in October.

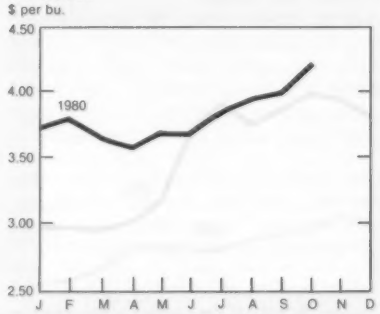
Corn[1]
$ per bu.



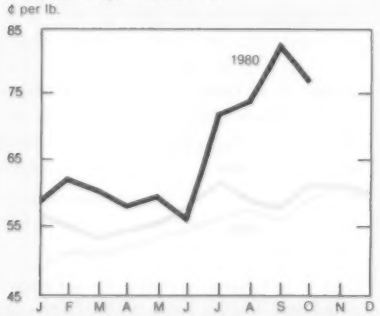
Soybeans[1]
$ per bu.



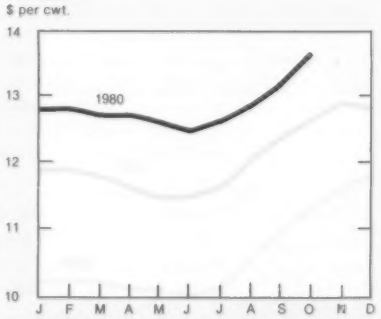
All Wheat[1]
$ per bu.



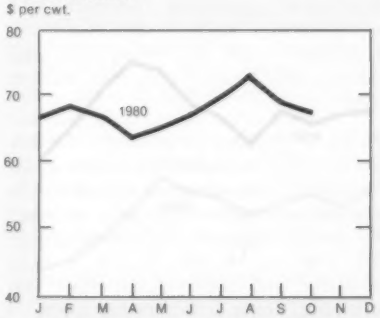
American Upland Cotton[1]
¢ per lb.



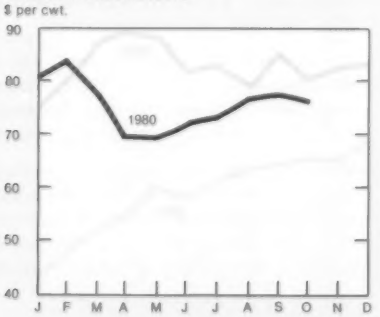
All Milk[1]
$ per cwt.



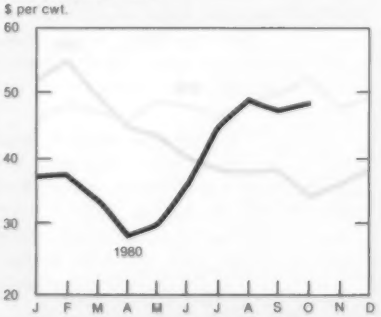
Choice Steers[2]
$ per cwt.



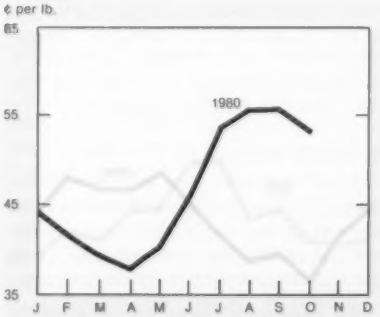
Choice Feeder Steers[3]
$ per cwt.



Barrows and Gilts[2]
$ per cwt.



Broilers[4]
¢ per lb.

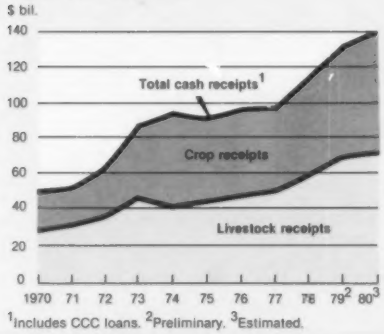


[1]U.S average prices received by farmers. Prices for the latest month are mid-month averages. [2]Omaha. [3]600-700 lbs., Kansas City. [4] Wholesale, New York.

The Cash Receipts Breakdown

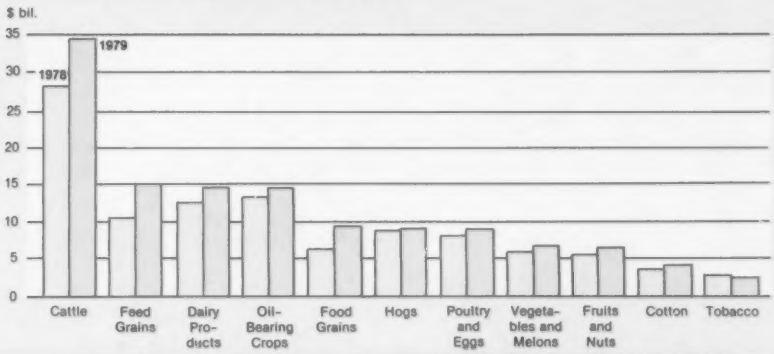
Cash receipts grew rapidly over the last decade, reaching around $140 billion in 1980. That's a 177-percent jump. Crop receipts in particular helped push up the figure, rising 238 percent from 1970 to 1980, compared with 133 percent for livestock. What commodities earned the burgeoning receipts, and where were they earned? In 1979, the latest year for which a breakdown is available, cattle and feed grains pulled in the highest receipts, earning $34.8 billion and $15 billion, respectively. Texas and Iowa earned the highest receipts for livestock production, while California and Illinois had the strongest crop receipts. But it was the north central states that, as a group, took the largest share of U.S. cash receipts, with 44 percent.

Crop Receipts Rising Faster Than Livestock

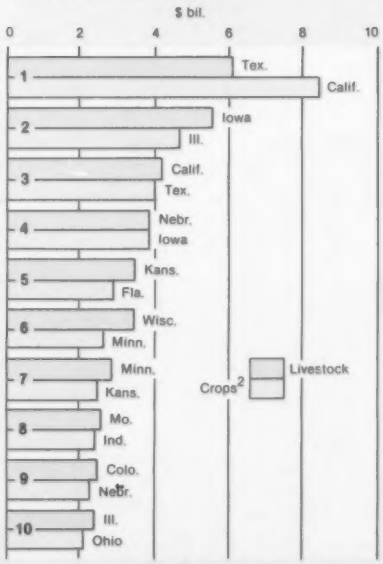


[1]Includes CCC loans. [2]Preliminary. [3]Estimated.

Cattle Keep Largest Share of Cash Receipts in 1979



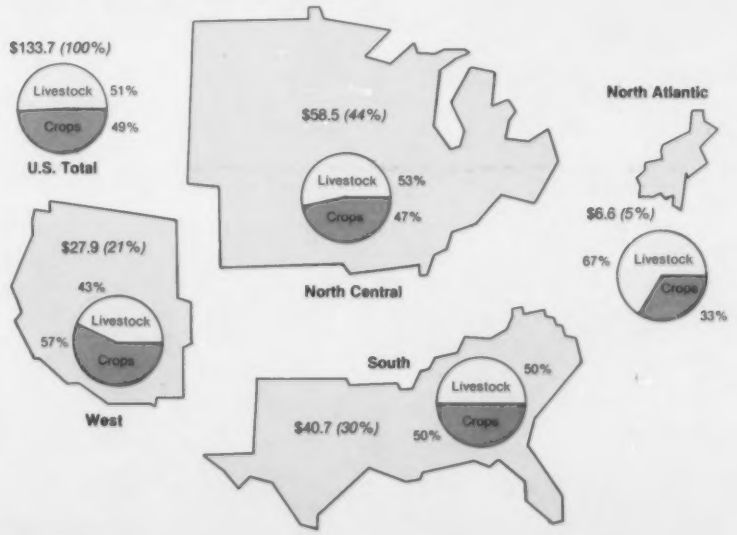
The Top Ten States–1979[1]



[1]Excluding Gov't. payments. [2]Excludes CCC loans.

North Central States Take in Almost Half of U.S. Cash Receipts

Total cash receipts in billions of dollars, 1979 *(% of U.S. total)*



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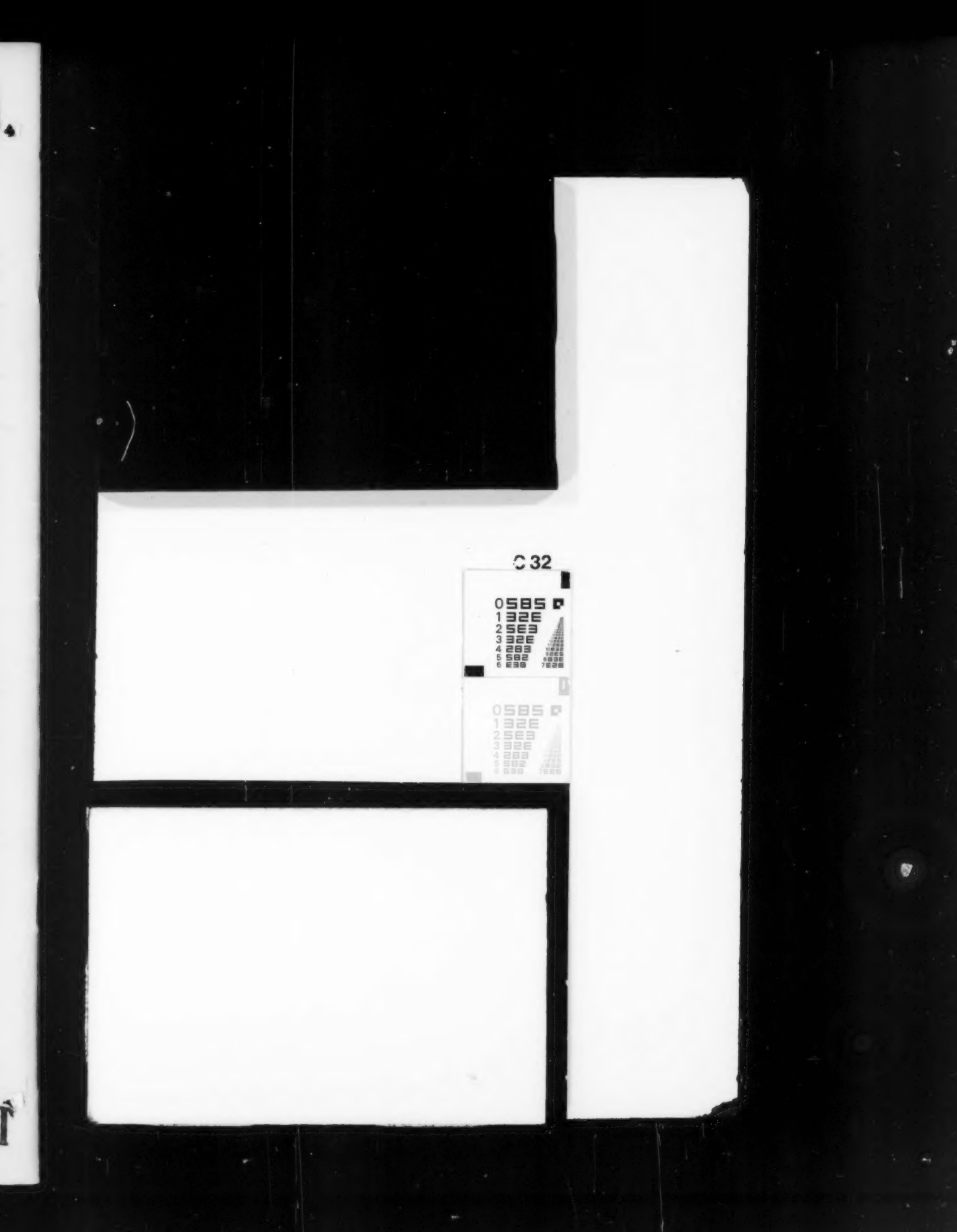
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